

DETAILED ACTION

1. Applicants' amendment filed August 25, 2008 is acknowledged. Claims 7-10, 12, 31-33 and 36 are amended. Claims 1-6, 11, 14-23, 25-29, 34-35, 37-55 and 94 are deleted. Claims 56-93 and 96-97 are withdrawn. Now, Claims 7-10, 12-13, 24, 30-33, 36 and 95 are pending for consideration.

2. The status identifiers for Claims 8-10, 12, 30, 32-33 and 36 are improper. They should be "(Currently amended)". Therefore, these claims are re-written in proper formats as shown below.

Examiner's Amendment

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

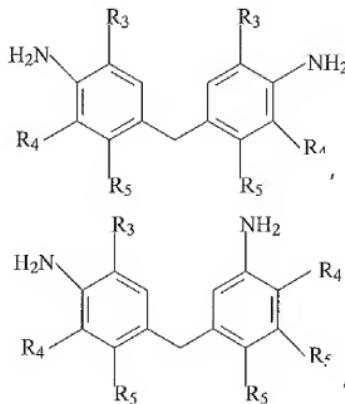
4. Authorization for this examiner's amendment was given in a telephone interview with Ms. Deborah M. Altman on September 16, 2008.

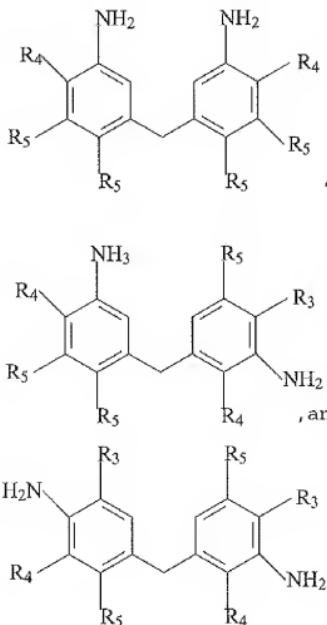
The application has been amended as follows:

Delete Claims 56-93 and 96-97.

Replace the whole context of Claim 8 with --

8. The polymerizable composition of claim 7 wherein the polyamine comprises a diamine selected from one or more of the group consisting of:

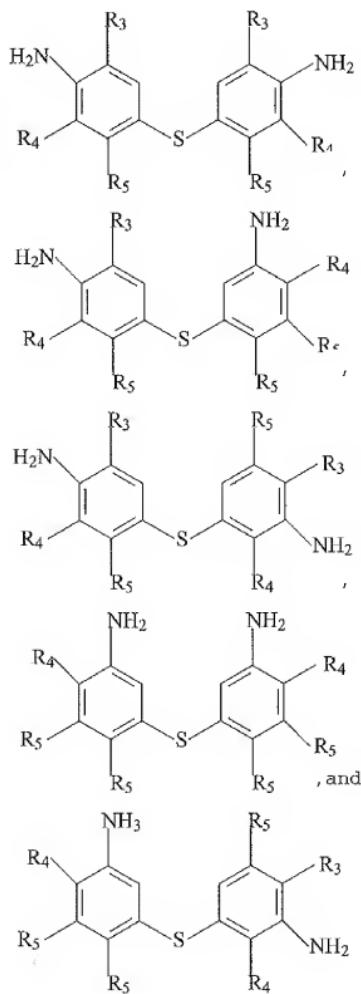




wherein R₃ and R₄ are each independently C₁-C₃ alkyl, and R₅ is selected from hydrogen and halogen, and mixtures of said diamines.

Replace the whole context of Claim 9 with --

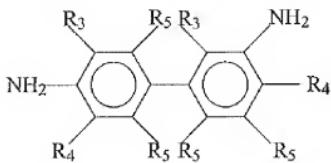
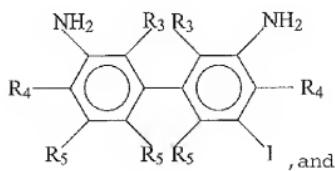
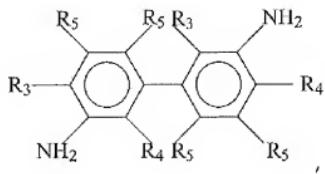
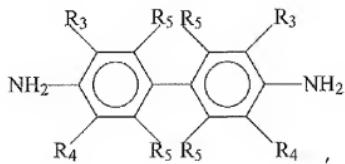
9. The polymerizable composition of claim 7 wherein the polyamine comprises a diamine selected from one or more of the group consisting of:



wherein R₃ and R₄ are each independently C₁-C₃ alkyl, and R₅ is selected from hydrogen and halogen, and mixtures of said diamines. --

Replace the whole context of Claim 10 with --

10. The polymerizable composition of claim 7 wherein the polyamine comprises a diamine selected from one or more of the group consisting of:



wherein R_3 and R_4 are each independently $\text{C}_1\text{-C}_3$ alkyl, and R_5 is selected from hydrogen and halogen, and mixtures of said diamines. --

Replace the whole context of Claim 12 with --

12. A polymerizable organic composition comprising one or more radically polymerizable monomers, at least one of which is a first monomer having at least two (meth)acryloyl groups and comprising one or more backbone linkages selected from thiourethane linkages and dithiourethane linkages,

wherein a precursor of said first monomer is prepared from the reaction of a reactive hydrogen material and a monomer having at least two functional groups selected from at least one of the group consisting of isocyanate and isothiocyanate,

wherein the reactive hydrogen material comprises

(a) a polythiol monomer; and/or

compounds having one or more thiol groups and one or more hydroxyl groups,

(b) a material comprising at least two primary amine groups and/or secondary amine groups, and

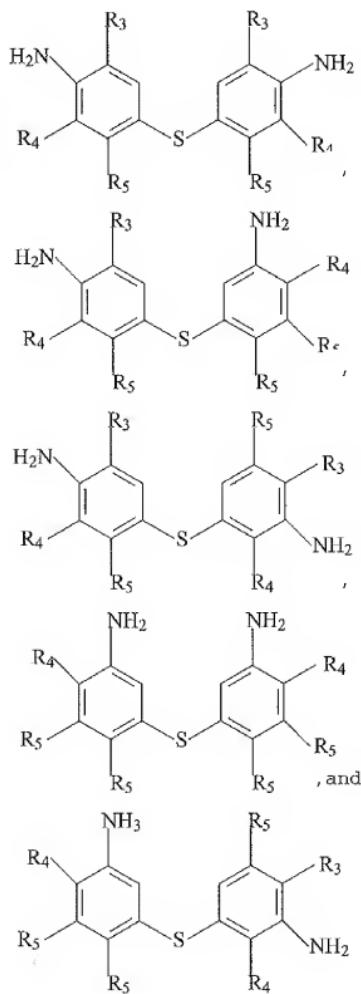
(c) optionally, a material comprising at least two hydroxyl groups. --

Replace the whole context of Claim 30 with --

30. A polymerizate formed by polymerizing the polymerizable organic composition of claim 7. --

Replace the whole context of Claim 32 with --

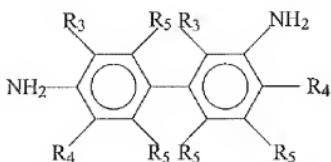
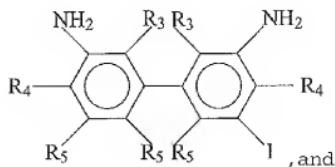
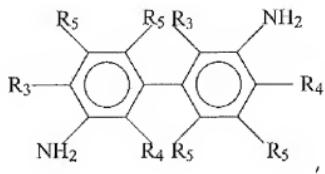
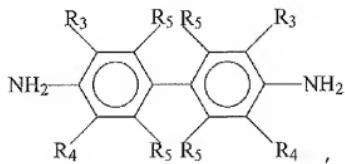
32. The polymerize of claim 30 wherein the reactive hydrogen-containing material comprises a diamine selected from one or more of the group consisting of:



wherein R₃ and R₄ are each independently C₁-C₃ alkyl, and R₅ is selected from hydrogen and halogen, and mixtures of said diamines. --

Replace the whole context of Claim 33 with --

33. The polymerizate of claim 30 wherein the reactive hydrogen-containing material comprises a diamine selected from one or more of the group consisting of :



wherein R_3 and R_4 are each independently $\text{C}_1\text{-C}_3$ alkyl, and R_5 is selected from hydrogen and halogen, and mixtures of said diamines. --

Replace the whole context of Claim 36 with --

36. The polymerize of claim 12 wherein the thiol groups of said polythiol monomer comprises at least 50 mole percent, based on the total molar equivalents of thiol groups, hydroxyl groups, primary amine groups and secondary amine groups of said polythiol monomer and said reactive hydrogen material. --

5. Claim rejection(s) under 35 USC 112 in the previous Office Action (Paper No. 20080202) is/are removed.

6. Claim rejection(s) under 35 USC 102 in the previous Office Action (Paper No. 20080202) is/are removed.

Allowable Subject Matter

7. Claims 7-10, 12-13, 24, 30-33, 36 and 95 are allowed.

8. The following is an examiner's statement of reasons for allowance:

The present claims are allowable for at least the following reason(s) over the closest references: Miranda (US 3 600 359) and Kobayashi (US 5 916 987)
Miranda discloses a polymerize derived from a polymerizable organic composition comprising a acrylate monomer containing at least one acryloyl

groups and thiourethane linkages as described in col. 2, line 28, wherein n is more than 1 (col. 2, lines 44-45), such as 2, 3, or 4 (col. 3, line 41). In addition to the acrylate monomer, Miranda further teaches the use of vinyl pyrrolidone which reads on Applicants' monoethylenically unsaturated monomer. Miranda further teaches that the acrylate monomer is prepared by reacting a polythiol monomer as described in col. 2, lines 14-27 where n is more than 1 (col. 2, lines 44-45), such as 2, 3, or 4 (col. 3, line 41) with a diisocyanate (col. 2, line 17). However, Miranda does not teach or fairly suggest a) the use of a polyamine for preparing the precursor of the first monomer set forth in Claim 7; b) the material comprising at least two primary amine groups and/or secondary amine groups set forth in Claim 12; and c) the use of the polythiol-containing diisocyanate set forth in Claims 24 and 95.

Kobayashi discloses a polymerizate derived from a composition comprising a sulfur-containing O-(meth)acrylate compound represented by formula (1) containing thiourethane linkages. (col. 2, line 1 to col. 3, line 7) The molar equivalent ratio of NCO/S_H is exemplified in Examples. Isocyanate compounds containing one or more sulfur atoms in its backbone can be used. (col. 6, lines 8-34) However, Kobayashi does not teach or fairly suggest a) the use of a polyamine for preparing the precursor of the first monomer set forth in Claim 7; b) the

material comprising at least two primary amine groups and/or secondary amine groups set forth in Claim 12; and c) the use of the polythiol-containing diisocyanate set forth in Claims 24 and 95.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kuo-Liang Peng whose telephone number is (571) 272-1091. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jim Seidleck, can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

klp
September 16, 2008

/Kuo-Liang Peng/
Primary Examiner, Art Unit 1796